

Title (en)
PROCESS FLUID LUBRICATED PUMP

Title (de)
DURCH PROZESSFLÜSSIGKEIT GESCHMIERTE PUMPE

Title (fr)
POMPE LUBRIFIÉE DANS UN FLUIDE DE TRAITEMENT

Publication
EP 3901465 A1 20211027 (EN)

Application
EP 21163248 A 20210317

Priority
EP 20170369 A 20200420

Abstract (en)
A process fluid lubricated pump is proposed, for conveying a process fluid, having a common housing (2), a pump unit (3) arranged in the common housing, and a drive unit (4) arranged in the common housing (2), wherein the common housing (2) comprises an inlet (21) and an outlet (22) for the process fluid, wherein the pump unit (3) comprises a pump shaft (5) extending from a drive end (51) to a non-drive end (52) of the pump shaft (5) and configured for rotating about an axial direction (A), the pump unit (3) further comprising at least a first stage impeller (31) fixedly mounted on the pump shaft (5), and a last stage impeller (33) fixedly mounted on the pump shaft (5), and optionally at least one intermediate stage impeller (32) fixedly mounted on the pump shaft (5) between the first stage impeller (31) and the last stage impeller (33) wherein the drive unit (4) is configured to exert a torque on the drive end (51) of the pump shaft (5) for driving the rotation of the pump shaft (5), wherein a balance drum (7) is fixedly connected to the pump shaft (5) between the pump unit (3) and the drive end (51) of the pump shaft (5), the balance drum (7) defining a drum front side (71) facing the pump unit (3) and a drum back side (72), wherein a relief passage (73) is provided between the balance drum (7) and a first stationary part (26) configured to be stationary with respect to the common housing (2), the relief passage (73) extending from the drum front side (71) to the drum back side (72), wherein the pump shaft (5) is radially supported in a non-contacting manner during operation of the pump, wherein the pump unit (3) comprises at most one hydrodynamic radial pump bearing (54) for supporting the pump shaft (5), wherein the at most one radial pump bearing (54) is arranged at the non-drive end (52) or at the drive end (51) of the pump shaft (5).

IPC 8 full level
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CPC (source: BR EP US)
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Citation (search report)
• [E] EP 3808984 A1 20210421 - SULZER MANAGEMENT AG [CH]
• [A] US 2017306966 A1 20171026 - VALLAND ÅSMUND [NO], et al

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